Zarafshan Wind Farm Raptor and Bustard Breeding Survey Protocol - 2022

Prepared for Wood/Juru.

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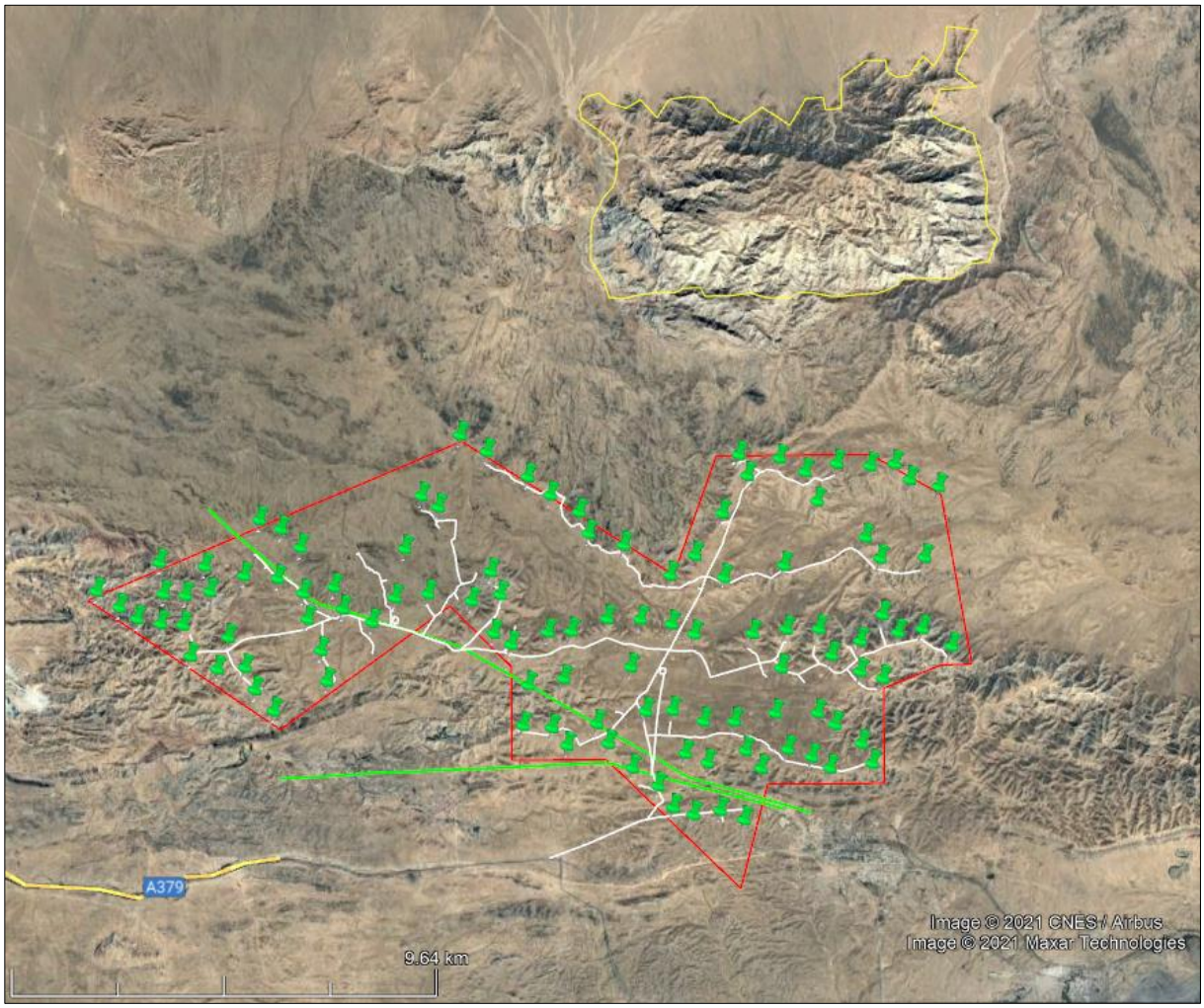
1 INTRODUCTION

1.1 Background

The purpose of this document is to outline the survey protocol for raptor and Houbara Bustard breeding surveys at the proposed Zarafshan Wind Farm, Zarafshan, Navoi Region, Uzbekistan (*Figure 1*) and surrounding areas.

Figure 1. Proposed Zarafshan Wind Farm area with roads, turbine locations, substations and existing overhead lines shown



Surveys were started in March 2020 and the methods detailed in this document are intended for use until the end of May 2022. Survey data collected between Spring 2020 and Spring 2021 has been used to create an initial Environmental and Social Impact Assessment (ESIA) and we have been asked by the Lenders to complete supplementary surveys on and around site (in particular within the Mt Aktau IBA) to establish current levels of raptor and Houbara Bustard breeding activity that are taking place. The results from these surveys will help inform the ongoing mitigation design and highlight areas of the site which may be closer to active nest sites than previous surveys could determine.

1.2 Survey Protocol Overview

Bird surveys involving Vantage Point (VP) surveys and transects being undertaken (*italic* text indicates surveys previously completed):

- *Spring Migration VP – Completed between March and May 2020*
- *Breeding Bird / Summer Transects – June to August 2020*
- *Summer VP – June, July to mid/late August 2020*
- *Autumn Migration VP – mid/late August 2020 to mid-November 2020*
- *Winter VP – November 2020 to March 2021*
- *Winter Transects – November 2020 to March 2021*
- *Spring contingency VP's – March to May 2021 – The need for these is to be determined*
- *Spring Breeding Bird/Migration Transects – March 2021 to May 2021*
- *Overhead Line Transects - March 2021 to May 2021*
- Raptor Nesting Surveys – December 2021 to May 2022
- Houbara Bustard Breeding Surveys – March to May 2022

1.3 Raptor Nesting Surveys

1.3.1 Background

Nest searches have taken place within the Project area and Mount Aktau IBA during previous survey periods however we have been requested to provide further informaiton for the larger/higher conservation concern species considered at risk from the project. The overall aim is to cover as much of the site and IBA as possible (utilising previous transect/point count locations and furthering these where possible). *Table 1* shows the primary target species for which these surveys have been requested and the target times for each survey (as per agreement with in country Ornithologists and the Lenders expert panel) in order to ensure breeding activity periods are covered for each species.

Table 1. Target species survey timings

Species	Feb	Mar	Apr	May	Jun	Jul	Aug
Bearded Vulture							
Griffon Vulture							
Cinereous Vulture							
Egyptian Vulture							
Golden Eagle							
Saker Falcon							
Houbara							

1.3.2 Methods

Transect Surveys (with point counts approximately every 500 m) will be undertaken in order to further understand the use of the site and surrounding areas for breeding and staging birds, with a particular

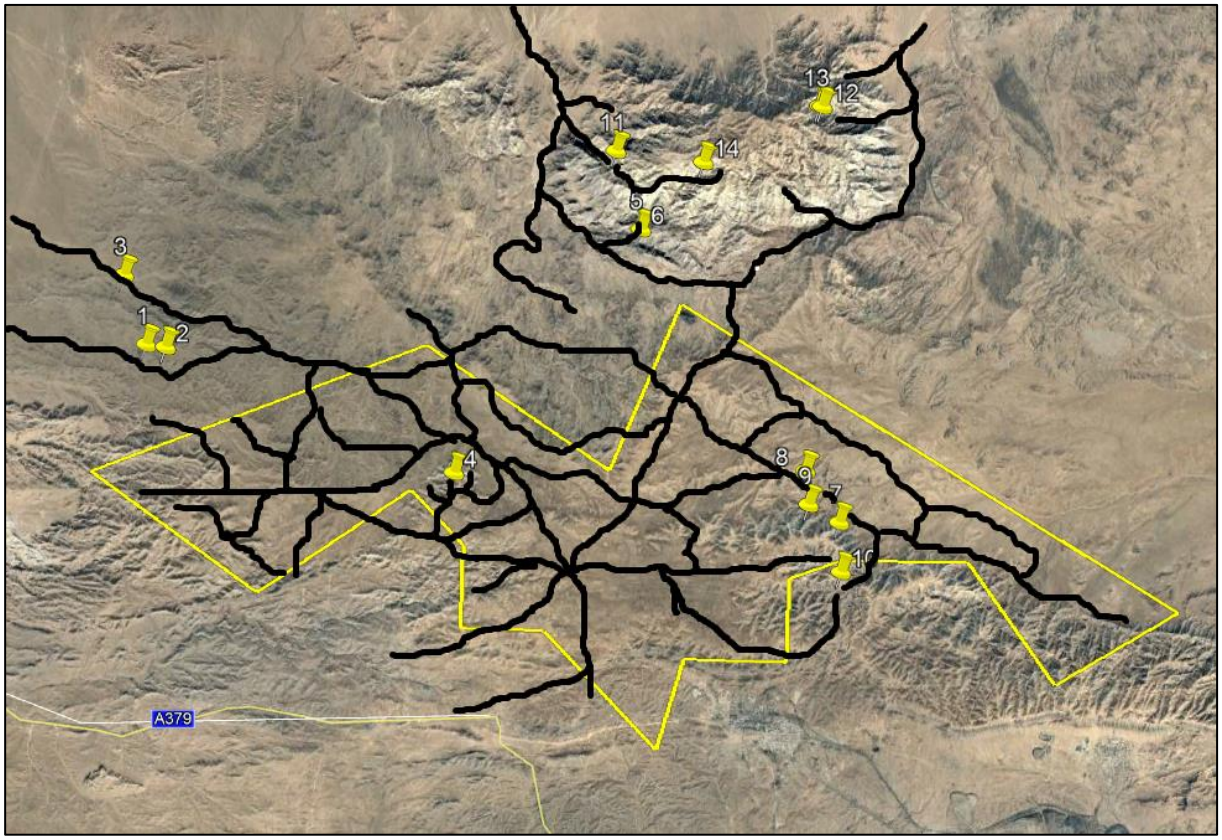
focus on raptor species which may be at risk from the proposed development, the timings for target species shall be based on those shown in *Table 1*. If significant aggregations of birds (of any species) are present please record the location and numbers observed.

Transect routes should be the same as were used in 2021 (*Figure 2)* with any additional routes that become possible also used and documented. The whole site should be covered at least monthly (*i.e.* all transect routes on site and in the IBA and potential staging/areas of aggregation), with transects starting within an hour of first light.

Where tracks and paths allow, sightings and nest/roost sites should be recorded and their locations mapped, with this data transferred to Excel master sheets and Google Earth mapping to be circulated to the project team. Based on previous efforts it is anticipated that **at least** 6-8 days per month (probably more) would be necessary to cover the Project area and the IBA site.

Survey during periods of significantly cold weather should be avoided, or transect routes adapted if there is a risk of disturbing brooding birds away from the nest

Figure 2: Bird Transects used in 2021, also showing known existing nest locations

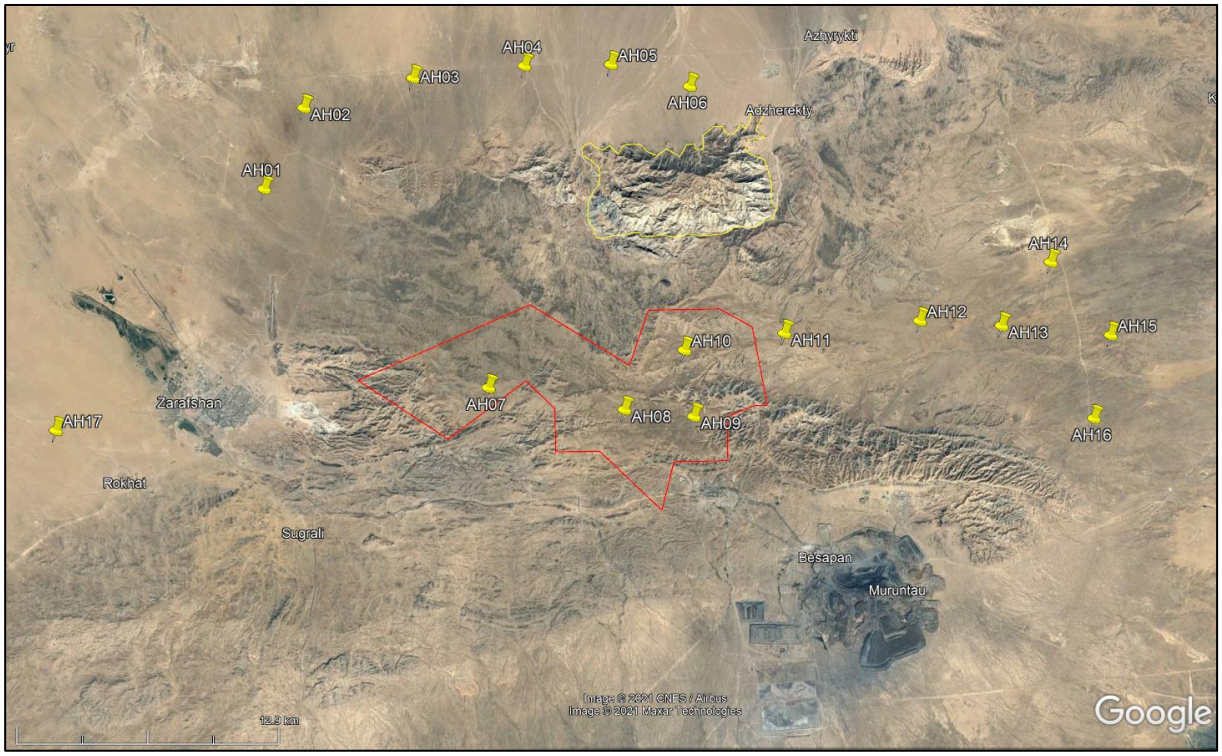


1.3.3 Other species Methods

Specific surveys for Houbara Bustard should take place within the Project area during the breeding season for this species (mid-March – mid-May) at which time displaying males are conspicuous and can be apparent from long distances. Each count should be conducted from the most appropriate vantage

point (highest point, typically a small rise), with a second count conducted from the same point. Each point count (an initial scan with binoculars followed by extensive scanning with a telescope) should last 30 minutes and should be undertaken by a single observer during the period of peak male display activity, *i.e.* within 3 h after sunrise or 2 h before sunset (*Combreau and Launay* 1996). Surveyors with good knowledge of the site should be used to determine the most appropriate survey locations and complete the surveys however this should cover all suitable habitat within, and immediately adjacent to, the site and proposed OHL route. *Figure 3* shows an indicative survey map and locations of point counts for this species.

Figure 3. Houbara Bustard Survey Locations



1.3.4 Surveyors

Surveyors will be suitably experienced ornithologists and able to identify all birds likely to be encountered in the project site and, where appropriate, should also be able to age and sex all birds seen. Lead Surveyors will have previous experience of work within the Project site and adjacent areas.

1.3.5 Equipment Requirements

The minimum equipment required to complete these surveys are;

- Field note book and writing implements;
- Field survey sheets;
- Weatherproof Clipboard;
- At least two stopwatches / timer watches;

- Compass / GPS unit;
- Binoculars (at least 8x magnification);
- Telescope (minimum 60mm x 25/30 magnification) with tripod;
- Appropriate field clothing to deal with harsh weather conditions;
- Radios / walkie-talkies; and
- Laptop computer with Excel required to write up the field sheets (or have access to).

1.3.6 Target Species and Secondary Species

Target species (shown in *Table 1*) represent the breeding species of greatest sensitivity and/or conservation concern. In addition, if nesting or breeding activity of any of the below additional species is identified this should also be recorded.

- ***Otidiformes*** – Bustards
- ***Accipitriformes*** – Osprey, Eagles, Vultures, Hawks, Buzzards *etc.*
- ***Falconidae*** – Falcons
- ***Strigiformes*** – Owls

1.3.7 Recording

Point Counts will be undertaken at every 250m along the transect routes. All species must be recorded as accurately as possible including relevant breeding behaviour notes or staging activity (if applicable).

Peak counts of species present within the areas/habitats adjacent will either be recorded on the backs of relevant maps, on separate sheets or in a notebook with area code, observer name, date, time and weather conditions clearly shown. Species of conservation concern (IUCN or Uzbekistan Red Data Book) should be noted individually as target notes or with grid references. The data will then be entered into the master data table. Incidental sightings of species of conservation concern, or significant food sources for birds of interest from other taxa such as Goitered Gazelle or Ground Squirrel should also be recorded if encountered.

1.4 Overhead Line Transects

In order to determine if birds are colliding with the existing overhead lines the ground below the transmission route and a 60 m buffer will be searched within the site boundary along with a 1 km distance outside the proposed wind farm area. *Figure 4* shows the proposed areas requiring survey and is the same as was surveyed in 2021. If a carcass is found the location, details of the species, estimated age of carcass, evidence of scavenging and whether the bird is below a pylon or below the line will be recorded using GPS and notebook. This survey should be undertaken twice during the winter and spring survey periods, with surveys completed at least two weeks apart. The transect can be driven at a low speed where possible with observers scanning the ground either side of the maintenance road and stopping to record if a carcass is identified.

Figure 4. Proposed Overhead Line Transect Route (shown in green)

1.5 Data Audit and Transfer

All data must be completely legible and neat enough to interpret. If field notes/maps become untidy, damaged or fade etc. they must be re-written to be able to be accurately transferred to a computer held master data table.

After the first survey efforts a copy of the master data table and photos/scans of the recording sheets must be sent to Turnstone Ecology. Following this the master data table will be sent after every two weeks.

Where possible all data sheets and notebooks will be scanned and saved to a data drive. All physical survey sheets must be kept and provided to Turnstone Ecology.

2 INCIDENTAL SIGHTINGS

Whilst on site undertaking surveys, all specialists will record incidental sightings of faunal species of note on the site (*e.g.* large flocks of migrating birds seen by reptile surveyors, mammals and reptiles seen by bird surveyors or birds and mammals recorded at night by the bat surveyors). A data table has been provided to record these sightings with as much detail as possible (*i.e. date, time, location, etc.*) and these records will need to be disseminated to the relevant specialist so they can be included in their final reports.